

**RAW SEQUENCE LISTING**  
**PATENT APPLICATION US/09/265,606**

DATE: 01/14/2000  
 TIME: 17:23:58

INPUT SET: S34472.raw

**This Raw Listing contains the General  
 Information Section and up to the first 5 pages.**

**ENTERED**

SEQUENCE LISTING

1  
 2  
 3 (1) General Information:  
 4  
 5 (i) APPLICANT: Zimmermann, Rainer; Park, John E.;  
 6 Rettig, Wolfgang; Old, Lloyd J.  
 7  
 8 (ii) TITLE OF INVENTION: ISOLATED DIMERIC FIBROBLAST ACTIVATION PROTEIN  
 9 ALPHA, AND USES THEREOF  
 10  
 11 (iii) NUMBER OF SEQUENCES: 10  
 12  
 13 (iv) CORRESPONDENCE ADDRESS:  
 14 (A) ADDRESSEE: Felfe & Lynch  
 15 (B) STREET: 805 Third Avenue  
 16 (C) CITY: New York City  
 17 (D) STATE: New York  
 18 (E) COUNTRY: USA  
 19 (F) ZIP: 10022  
 20  
 21 (v) COMPUTER READABLE FORM:  
 22 (A) MEDIUM TYPE: Diskette, 3.5 inch, 2.0 MB storage  
 23 (B) COMPUTER: IBM PS/2  
 24 (C) OPERATING SYSTEM: PC-DOS  
 25 (D) SOFTWARE: Wordperfect  
 26  
 27 (vi) CURRENT APPLICATION DATA:  
 28 (A) APPLICATION NUMBER: 09/265,606  
 29 (B) FILING DATE:  
 30 (C) CLASSIFICATION:  
 31  
 32 (vii) PRIOR APPLICATION DATA:  
 33 (A) APPLICATION NUMBER: US/08/619,280  
 34 (B) FILING DATE: 18-MARCH-1996  
 35  
 36 (A) APPLICATION NUMBER: 08/230,491  
 37 (B) FILING DATE: 20-APRIL-1994  
 38  
 39 (viii) ATTORNEY/AGENT INFORMATION:  
 40 (A) NAME: Hanson, Norman D.  
 41 (B) REGISTRATION NUMBER: 30,946  
 42 (C) REFERENCE/DOCKET NUMBER: LUD 5330.1  
 43  
 44 (ix) TELECOMMUNICATION INFORMATION:  
 45 (A) TELEPHONE: (212) 688-9200  
 46 (B) TELEFAX: (212) 838-3884

RAW SEQUENCE LISTING  
PATENT APPLICATION US/09/265,606

DATE: 01/14/2000

TIME: 17:23:58

INPUT SET: S34472.raw

47 (2) INFORMATION FOR SEQ ID NO: 1:  
48 (i) SEQUENCE CHARACTERISTICS:  
49 (A) LENGTH: 2815 Base pairs  
50 (B) TYPE: nucleic acid  
51 (C) STRANDEDNESS: double  
52 (D) TOPOLOGY: linear  
53 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:  
54  
55  
56 AAGAACGCCC CAAAATCTG TTTCTAATTT TACAGAAATC TTTTGAAACT TGGCACGGTA 60  
57 TTCAAAAGTC CGTGGAAAGA AAAAAACCTT GTCCTGGCTT CAGCTTCCAA CTACAAAGAC 120  
58 AGACTTGGTC CTTTTCAACG GTTTTCACAG ATCCAGTGAC CCACGCTCTG AAGACAGAAT 180  
59 TAGCTAACTT TCAAAAACAT CTGGAAAAAT GAAGACTTGG GTAAAAATCG TATTTGGAGT 240  
60 TGCCACCTCT GCTGTGCTTG CCTTATTGGT GATGTGCATT GTCTTACGCC CTTCAAGAGT 300  
61 TCATAACTCT GAAGAAAATA CAATGAGAGC ACTCACACTG AAGGATATTT TAAATGGAAC 360  
62 ATTTTCTTAT AAAACATTTT TTCCAAACTG GATTTTCAGGA CAAGAATATC TTCATCAATC 420  
63 TGCAGATAAC AATATAGTAC TTTATAATAT TGAACAGGA CAATCATATA CCATTTTGAG 480  
64 TAATAGAACC ATGAAAAGTG TGAATGCTTC AAATTACGGC TTATCACCTG ATCGGCAATT 540  
65 TGTATATCTA GAAAGTGATT ATTCAAAGCT TTGGAGATAC TCTTACACAG CAACATATTA 600  
66 CATCTATGAC CTTAGCAATG GAGAATTTGT AAGAGGAAAT GAGCTTCCTC GTCCAATTCA 660  
67 GTATTTATGC TGGTCGCCTG TTGGGAGTAA ATTAGCATAT GTCTATCAAA ACAATATCTA 720  
68 TTTGAAACAA AGACCAGGAG ATCCACCTTT TCAAATAACA TTTAATGGAA GAGAAAATAA 780  
69 AATATTTAAT GGAATCCCAG ACTGGGTTTT TGAAGAGGAA ATGCTTCCTA CAAAATATGC 840  
70 TCTCTGGTGG TCTCCTAATG GAAAATTTTT GGCATATGCG GAATTTAATG ATAAGGATAT 900  
71 ACCAGTTATT GCCTATTCTT ATTATGGCGA TGAACAATAT CCTAGAACAA TAAATATTCC 960  
72 ATACCCAAAG GCTGGAGCTA AGAATCCCGT TGTTCGGATA TTTATTATCG ATACCACTTA 1020  
73 CCCTGCGTAT GTAGGTCCCC AGGAAGTGCC TGTTCAGCA ATGATAGCCT CAAGTGATTA 1080  
74 TTATTTCACT TGGCTCACGT GGGTTACTGA TGAACGAGTA TGTTCGAGT GGCTAAAAAG 1140  
75 AGTCCAGAAT GTTTCGGTCC TGTCTATATG TGACTTCAGG GAAGACTGGC AGACATGGGA 1200  
76 TTGTCCAAAG ACCCAGGAGC ATATAGAAGA AAGCAGAACT GGATGGGCTG GTGGATTCTT 1260  
77 TGTTTCAAGA CCAGTTTTCA GCTATGATGC CATTTCGTAC TACAAAATAT TTAGTGACAA 1320  
78 GGATGGCTAC AAACATATTC ACTATATCAA AGACACTGTG GAAAATGCTA TTCAAATTAC 1380  
79 AAGTGGCAAG TGGGAGGCCA TAAATATATT CAGAGTAACA CAGGATTAC TGTTTTATTC 1440  
80 TAGCAATGAA TTTGAAGAAT ACCCTGGAAG AAGAAACATC TACAGAATTA GCATTGGAAG 1500  
81 CTATCCTCCA AGCAAGAAGT GTGTTACTTG CCATCTAAGG AAAGAAAGGT GCCAATATTA 1560  
82 CACAGCAAGT TTCAGCGACT ACGCCAAGTA CTATGCACTT GTCTGCTACG GCCCAGGCAT 1620  
83 CCCCATTTC ACCCTTCATG ATGGACGCAC TGATCAAGAA ATTAAAATCC TGGAAGAAAA 1680  
84 CAAGGAATTG GAAAATGCTT TGAAAAATAT CCAGCTGCCT AAAGAGGAAA TTAAGAAACT 1740  
85 TGAAGTAGAT GAAATTACTT TATGGTACAA GATGATTCTT CCTCCTCAAT TTGACAGATC 1800  
86 AAAGAAGTAT CCCTTGCTAA TTCAAGTGTA TGGTGGTCCC TGCAGTCAGA GTGTAAGGTC 1860  
87 TGTATTTGCT GTTAATTGGA TATCTTATCT TGCAAGTAAG GAAGGGATGG TCATTGCCCTT 1920  
88 GGTGGATGGT CGAGGAACAG CTTTCCAAGG TGACAACTC CTCTATGCAG TGTATCGAAA 1980  
89 GCTGGGTGTT TATGAAGTTG AAGACCAGAT TACAGCTGTC AGAAAATTCA TAGAAATGGG 2040  
90 TTTTATTGAT GAAAAAGAA TAGCCATATG GGGCTGGTCC TATGGAGGAT ACGTTTCATC 2100  
91 ACTGGCCCTT GCATCTGGAA CTGGTCTTTT CAAATGTGGT ATAGCAGTGG CTCCAGTCTC 2160  
92 CAGCTGGGAA TATTACGCGT CTGTCTACAC AGAGAGATTC ATGGGTCTCC CAACAAAGGA 2220  
93 TGATAATCTT GAGCACTATA AGAATTCAAC TGTGATGGCA AGAGCAGAAT ATTTTCAGAAA 2280  
94 TGTAGACTAT CTTCTCATCC ACGGAACAGC AGATGATAAT GTGCACTTTC AAACTCAGC 2340  
95 ACAGATTGCT AAAGCTCTGG TTAATGCACA AGTGGATTTC CAGGCAATGT GGTACTCTGA 2400  
96 CCAGAACCAC GGCTTATCCG GCCTGTCCAC GAACCACTTA TACACCACCA TGACCCACTT 2460  
97 CCTAAAGCAG TGTCTCTCTT TGTCAAGTCA AAAACGATGC AGATGCAAGC CTGTATCAGA 2520  
98 ATCTGAAAAA CTTATATAAA CCCCTCAGAC AGTTTGCTTA TTTTATTTT TATGTTGTAA 2580  
99 AATGCTAGTA TAAACAAACA AATTAATGTT GTTCTAAAGG CTGTTAAAAA AAAGATGAGG 2640

# RAW SEQUENCE LISTING PATENT APPLICATION US/09/265,606

DATE: 01/14/2000  
TIME: 17:23:59

INPUT SET: S34472.raw

100 ACTCAGAAAGT TCAAGCTAAA TATTGTTTAC ATTTTCTGGT ACTCTGTGAA AGAAGAGAAA 2700  
101 AGGGAGTCAT GCATTTTGCT TTGGACACAG TGTTTTATCA CCTGTTCATT TGAAGAAAAA 2760  
102 TAATAAAGTC AGAAGTTCAA AAAAAAAAAA AAAAAAAAAA AAAGCGGCCG CTCGA 2815  
103  
104  
105

106 (2) INFORMATION FOR SEQ ID NO: 2:

107 (i) SEQUENCE CHARACTERISTICS:

108 (A) LENGTH: 760 amino acids

109 (B) TYPE: amino acid

110 (D) TOPOLOGY: linear

111 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

112

113

114 Met Lys Thr Trp Val Lys Ile Val Phe Gly Val Ala Thr Ser Ala Val  
115 5 10 15

116

117 Leu Ala Leu Leu Val Met Cys Ile Val Leu Arg Pro Ser Arg Val His  
118 20 25 30

119

120 Asn Ser Glu Glu Asn Thr Met Arg Ala Leu Thr Leu Lys Asp Ile Leu  
121 35 40 45

122

123 Asn Gly Thr Phe Ser Tyr Lys Thr Phe Phe Pro Asn Trp Ile Ser Gly  
124 50 55 60

125

126 Gln Glu Tyr Leu His Gln Ser Ala Asp Asn Asn Ile Val Leu Tyr Asn  
127 65 70 75 80

128

129 Ile Glu Thr Gly Gln Ser Tyr Thr Ile Leu Ser Asn Arg Thr Met Lys  
130 85 90 95

131

132 Ser Val Asn Ala Ser Asn Tyr Gly Leu Ser Pro Asp Arg Gln Phe Val  
133 100 105 110

134

135 Tyr Leu Glu Ser Asp Tyr Ser Lys Leu Trp Arg Tyr Ser Tyr Thr Ala  
136 115 120 125

137

138 Thr Tyr Tyr Ile Tyr Asp Leu Ser Asn Gly Glu Phe Val Arg Gly Asn  
139 130 135 140

140

141 Glu Leu Pro Arg Pro Ile Gln Tyr Leu Cys Trp Ser Pro Val Gly Ser  
142 145 150 155 160

143

144 Lys Leu Ala Tyr Val Tyr Gln Asn Asn Ile Tyr Leu Lys Gln Arg Pro  
145 165 170 175

146

147 Gly Asp Pro Pro Phe Gln Ile Thr Phe Asn Gly Arg Glu Asn Lys Ile  
148 180 185 190

149

150 Phe Asn Gly Ile Pro Asp Trp Val Tyr Glu Glu Glu Met Leu Pro Thr  
151 195 200 205

152

# RAW SEQUENCE LISTING PATENT APPLICATION US/09/265,606

DATE: 01/14/2000  
TIME: 17:23:59

INPUT SET: S34472.raw

```

153 Lys Tyr Ala Leu Trp Trp Ser Pro Asn Gly Lys Phe Leu Ala Tyr Ala
154      210                      215                      220
155
156 Glu Phe Asn Asp Lys Asp Ile Pro Val Ile Ala Tyr Ser Tyr Tyr Gly
157 225                      230                      235                      240
158
159 Asp Glu Gln Tyr Pro Arg Thr Ile Asn Ile Pro Tyr Pro Lys Ala Gly
160                      245                      250                      255
161
162 Ala Lys Asn Pro Val Val Arg Ile Phe Ile Ile Asp Thr Thr Tyr Pro
163                      260                      265                      270
164
165 Ala Tyr Val Gly Pro Gln Glu Val Pro Val Pro Ala Met Ile Ala Ser
166      275                      280                      285
167
168 Ser Asp Tyr Tyr Phe Ser Trp Leu Thr Trp Val Thr Asp Glu Arg Val
169 290                      295                      300
170
171 Cys Leu Gln Trp Leu Lys Arg Val Gln Asn Val Ser Val Leu Ser Ile
172 305                      310                      315                      320
173
174 Cys Asp Phe Arg Glu Asp Trp Gln Thr Trp Asp Cys Pro Lys Thr Gln
175                      325                      330                      335
176
177 Glu His Ile Glu Glu Ser Arg Thr Gly Trp Ala Gly Gly Phe Phe Val
178      340                      345                      350
179
180 Ser Arg Pro Val Phe Ser Tyr Asp Ala Ile Ser Tyr Tyr Lys Ile Phe
181      355                      360                      365
182
183 Ser Asp Lys Asp Gly Tyr Lys His Ile His Tyr Ile Lys Asp Thr Val
184 370                      375                      380
185
186 Glu Asn Ala Ile Gln Ile Thr Ser Gly Lys Trp Glu Ala Ile Asn Ile
187 385                      390                      395                      400
188
189 Phe Arg Val Thr Gln Asp Ser Leu Phe Tyr Ser Ser Asn Glu Phe Glu
190      405                      410                      415
191
192 Glu Tyr Pro Gly Arg Arg Asn Ile Tyr Arg Ile Ser Ile Gly Ser Tyr
193      420                      425                      430
194
195 Pro Pro Ser Lys Lys Cys Val Thr Cys His Leu Arg Lys Glu Arg Cys
196      435                      440                      445
197
198 Gln Tyr Tyr Thr Ala Ser Phe Ser Asp Tyr Ala Lys Tyr Tyr Ala Leu
199      450                      455                      460
200
201 Val Cys Tyr Gly Pro Gly Ile Pro Ile Ser Thr Leu His Asp Gly Arg
202 465                      470                      475                      480
203
204 Thr Asp Gln Glu Ile Lys Ile Leu Glu Glu Asn Lys Glu Leu Glu Asn
205      485                      490                      495

```

# RAW SEQUENCE LISTING PATENT APPLICATION US/09/265,606

DATE: 01/14/2000  
TIME: 17:23:59

INPUT SET: S34472.raw

```

206
207 Ala Leu Lys Asn Ile Gln Leu Pro Lys Glu Glu Ile Lys Lys Leu Glu
208           500           505           510
209
210 Val Asp Glu Ile Thr Leu Trp Tyr Lys Met Ile Leu Pro Pro Gln Phe
211           515           520           525
212
213 Asp Arg Ser Lys Lys Tyr Pro Leu Leu Ile Gln Val Tyr Gly Gly Pro
214           530           535           540
215
216 Cys Ser Gln Ser Val Arg Ser Val Phe Ala Val Asn Trp Ile Ser Tyr
217 545           550           555           560
218
219 Leu Ala Ser Lys Glu Gly Met Val Ile Ala Leu Val Asp Gly Arg Gly
220           565           570           575
221 Thr Ala Phe Gln Gly Asp Lys Leu Leu Tyr Ala Val Tyr Arg Lys Leu
222           580           585           590
223
224 Gly Val Tyr Glu Val Glu Asp Gln Ile Thr Ala Val Arg Lys Phe Ile
225           595           600           605
226
227 Glu Met Gly Phe Ile Asp Glu Lys Arg Ile Ala Ile Trp Gly Trp Ser
228 610           615           620
229
230 Tyr Gly Gly Tyr Val Ser Ser Leu Ala Leu Ala Ser Gly Thr Gly Leu
231 625           630           635           640
232
233 Phe Lys Cys Gly Ile Ala Val Ala Pro Val Ser Ser Trp Glu Tyr Tyr
234           645           650           655
235
236 Ala Ser Val Tyr Thr Glu Arg Phe Met Gly Leu Pro Thr Lys Asp Asp
237           660           665           670
238
239 Asn Leu Glu His Tyr Lys Asn Ser Thr Val Met Ala Arg Ala Glu Tyr
240           675           680           685
241
242 Phe Arg Asn Val Asp Tyr Leu Leu Ile His Gly Thr Ala Asp Asp Asn
243 690           695           700
244
245 Val His Phe Gln Asn Ser Ala Gln Ile Ala Lys Ala Leu Val Asn Ala
246 705           710           715           720
247
248 Gln Val Asp Phe Gln Ala Met Trp Tyr Ser Asp Gln Asn His Gly Leu
249           725           730           735
250
251 Ser Gly Leu Ser Thr Asn His Leu Tyr Thr His Met Thr His Phe Leu
252           740           745           750
253
254 Lys Gln Cys Phe Ser Leu Ser Asp
255           755           760
256
257
258

```

PAGE: 1

**SEQUENCE VERIFICATION REPORT**  
**PATENT APPLICATION US/09/265,606**

DATE: 01/14/2000  
TIME: 17:24:01

*INPUT SET: S34472.raw*

Line	Error	Original Text
------	-------	---------------